

# HARD CARBON COATING

*An addition to the Garr Tool lineup of quality coating options*

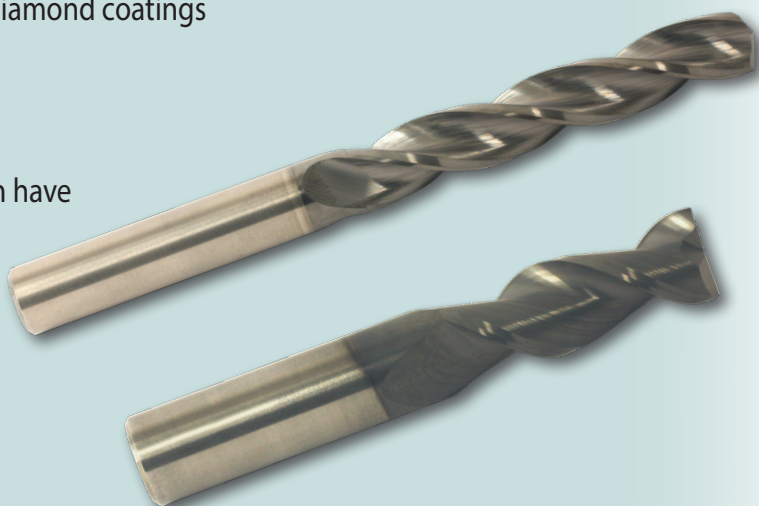


## *Recommended applications:*

Aluminum and aluminum alloys with up to 12% silicon  
Non-ferrous metals such as copper, bronze, and platinum  
Composites such as GRP, CFK, CFRP, and PEEK  
Applications involving combined abrasion and adhesion

## *Advantages of using Hard Carbon:*

Excellent wear resistance due to high hardness  
Sharp cutting edges in comparison with diamond coatings  
Very good adhesion  
Thin, smooth, high density  
Can be used on end mills and drills  
Most standard products in our catalog can have  
Hard Carbon added in 2 weeks



## *\* Sample Pricing:*

### 50-100 pc. pricing column

<13157> 230MA 1/4" TiAlN Coated - \$18.16 each

<13150> 230M 1/4" add Hard Carbon Coating - \$24.74 each

<10158> 210D 1/4" Diamond Coated - \$107.53 each

\* Pricing listed as of 5/16/2022, and is meant for comparison only.  
For specific and current pricing, please contact our sales office to request a quote.

Solid micrograin carbide tested for drilling of carbon fiber and glass-filled composites

These specials are built to order uncoated in two weeks

Having a quality dust collection system helps prolong tool life and quality of parts

'Clamping' of part to table can cause stress fractures in material



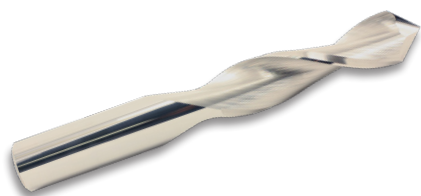
## SERIES 780 - 8-FACET POINT

Double angle drill point geometry reduces cutting forces to eliminate exit burrs

Works well in carbon fiber especially when the honeycomb core is either titanium or aluminum

Works in glass-filled epoxy, harder plastics, softer steels, CFRP (Carbon Fiber Reinforced Plastic), and aluminum

Can be coated with a variety of coatings depending on your application



## SERIES 805 - CARBON FIBER

Designed for drilling CFRP and plastics

Good in both multidirectional fibers and unidirectional fibers

90° center cutting point for better entry and exit hole with little to no delamination

Parabolic flute shape for less tool pressure on the material, and also for better chip flow in soft plastics

Add Hard Carbon coating for longer tool life than uncoated tools, and shorter lead times than Diamond coating

## ROUTERS

Solid micrograin carbide tested for milling of carbon fiber and glass-filled composites

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There are many challenges to machining composite materials. Keeping the material from delaminating is key. Our tools have higher rake angles and combinations of left hand and/or right hand spirals to help eliminate 'fraying' of the laminate.

Please specify what type of end cut your job requires (*i.e.* - *no end cut, burr type, end mill type, or drill point*)

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Please specify what coating, if any, your job requires:

- Polycrystalline Diamond
- Amorphous Diamond / Hard Carbon
- AlCrN Coated



### SERIES 700 - FIBERGLASS ROUTER

For cutting glass-filled epoxies

End cut examples



Burr  
Type



Drill  
Point

### SERIES 701 - KEVLAR ROUTER

Gives a clean edge when trimming  
Aramid Fibers (Kevlar)

End cut examples



Burr  
Type



Drill  
Point

### SERIES 702 - CARBON FIBER ROUTER

For trim milling of single-layer panels

### SERIES 703 - CARBON FIBER ROUTER

For rough cutting of stacked panels  
with or without honeycomb cores

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## SERIES 704 - COMPRESSION ROUTER - 4 FLUTE

For profile milling of carbon fiber



## SERIES 705 - COMPRESSION ROUTER - 2 FLUTE

For slotting of carbon fiber



## SERIES 706 - SINGLE FLUTE ROUTER

For aluminum and soft plastics

